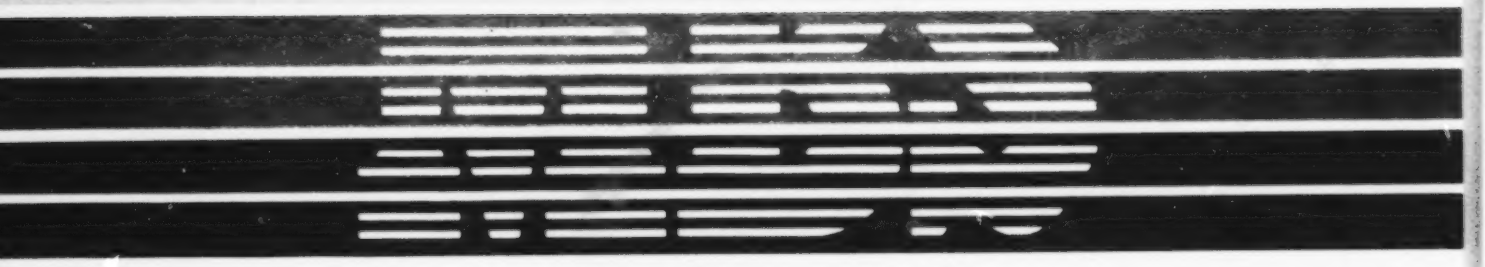
MANITOBA ANNUAL ECONOMIC ACCOUNTS

BACKGROUND NOTES

Manitoba
Bureau of
Statistics



JUNE 16, 1988

TABLE OF CONTENTS

		PAGE
1.	INTRODUCTION	1
2.	CONCEPTUAL FRAMEWORK FOR THE ANNUAL ACCOUNTS	1
3.	WHAT ANNUAL ECONOMIC ACCOUNTS MEASURE	2
4.	ECONOMIC ACCOUNT USES	2
5.	SOME KEY CONCEPTS	3
6.	DATA SOURCES FOR THE ANNUAL ECONOMIC ACCOUNTS	5
7.	DATA AVAILABILITY	5
8.	DEFLATION OF THE ANNUAL ECONOMIC ACCOUNTS	5
9.	FUTURE DEVELOPMENT WORK	8

MANITOBA ANNUAL ECONOMIC ACCOUNTS
BACKGROUND NOTES

(1) INTRODUCTION:

The Manitoba Bureau of Statistics has made the publication of an annual set of Provincial Economic Accounts the cornerstone of its economic statistics program. The production of the MBS Manitoba Economic Accounts has been designed to supplement, not duplicate, the current provincial economic accounts program of Statistics Canada. The MBS Economic Accounts are published much earlier than the Statistics Canada Economic Accounts (approximately 4 to 5 months after year end as compared to upwards to fifteen months for Statistics Canada) and include data of real Gross Domestic Product, GDP by Industry and Activity, and Trade, none of which is currently produced by Statistics Canada.

In May of 1983, the Manitoba Bureau of Statistics published its first set of Provincial Economic Accounts for Manitoba. Included with this release were estimates of nominal GDP (Income Account only), Personal Income and GDP by Industry (for thirteen industries) for the period 1961 to 1982. In June 1984, MBS released the nominal Expenditure Account and in November, 1984 a deflated Expenditure Account was published giving constant dollar GDP. Since then, GDP by Activity has been added, the number of industries has increased from thirteen to nineteen, and more detailed information on individual sectors has been made available.

Below is provided a brief description of some key concepts, sources, and uses of the Manitoba Provincial Economic Accounts. Users who have any questions or wish more detailed information should contact Roy Ellis (204) 945-2994 at the Manitoba Bureau of Statistics.

(2) CONCEPTUAL FRAMEWORK FOR THE ANNUAL ACCOUNTS:

The Manitoba Provincial Economic Accounts employ a conceptual framework similar to that recommended by the United Nations and adopted by Statistics Canada in its Canadian System of National Accounts. This allows for interprovincial, national and international comparisons of economic performance.

Although the sources and methods of the MBS and National Economic Accounts are similar, problems with data availability imply that the MBS Economic Accounts (as with all Provincial Economic Accounts and all provincial data series in general) are less reliable than the National Economic Accounts. Generally, Provincial Economic Accounts are also subject to greater annual revisions than the National Accounts.

(3) WHAT ANNUAL ECONOMIC ACCOUNT MEASURE:

Provincial Economic Accounts seek to measure the value of all final goods and services produced by the provincial economy in a given period of time. They are grounded in macro economic theory and provide a systematic description of the economy in one comprehensive and interrelated statistical system.

The accounts measure the performance of the provincial economy by means of a balancing set of accounts, similar to the annual profit and loss statement of a business enterprise. They provide a basic statistical picture of the key economic processes of production, income generation, sales to major markets, consumption and capital formation.

Economic Accounts do not measure social welfare. They are centered around market-based activity, and they follow clearly defined market-based criteria. They take no account of social costs or negative externalities such as air and water pollution, or problems resulting from crime, urban crowding, etc. In this specific sense they cannot measure changes in welfare.

(4) ECONOMIC ACCOUNT USES:

Economic Accounts have many applications which include:

(A) Current Economic Analysis

The accounts facilitate the evaluation of the current performance of the Manitoba economy and allow comparisons with other jurisdictions.

(B) Analysis of Structural Changes

The accounts permit comparison of changes in factor shares, industrial shares, and other indicators of fundamental structural change in the economy over time.

(C) Analysis of Sectoral and/or Industrial Performance

Provincial Economic Accounts make it possible to assess the relative importance and the relative performance of a particular sector or industry in the economy.

(D) Productivity Analysis

Using Gross Domestic Product by Industry from the Economic Accounts, it is possible to estimate the productivity of labour for each industry, in terms of output per worker. Productivity analysis is useful in determining industrial trends, competitiveness and in other applications.

(E) Model Building

The system of economic accounts provide a conceptual framework and required inputs to permit the construction of short and medium term forecasting models. These models can be used to "predict" economic performance and "simulate" the probable effects of proposed tax changes, etc., on future aggregate economic performance.

(F) Background to the Budget

The accounts provide a description of key economic activity which can provide background information for the budget.

(5) SOME KEY CONCEPTS:

(A) Defining Production

Total Production of the province may be defined in two ways:

(i) Gross Provincial Product (GPP) is the value of production of goods and services attributable to residents of the province regardless of the location of production.

(ii) Gross Domestic Product (GDP) is the value of production of goods and services within the geographical boundaries of the province regardless of whether the production is owned by residents of the province.

In short, GPP is concerned with "ownership", while GDP is concerned with "location" of production. The Bureau has adopted GDP as its measure of production for the Manitoba Economic Accounts.

(B) Different Methods of Measuring Production

There are three different ways to measure production. They are the income, final expenditures or net value added (gross output less purchased inputs) by industry.

The Manitoba Economic Accounts use the first two methods, income and expenditures.

In addition, there is an industrial distribution of the income account which yields GDP by industry.

A problem currently exists that, due to data limitations on trade in services, it is not possible to fully articulate the expenditure account. Therefore MBS follows Statistics Canada's practice of using the income account as the control account to calculate GDP. In other words, nominal GDP is calculated by summing the income account. The value of GDP from the income account is carried over to the expenditure account and all know items are subtracted (i.e., personal expenditure, government current expenditure, gross fixed capital formation, the value of

physical change in inventories, and the merchandise trade balance) to derive residually the net trade in services and residual error of estimate. There does not currently exist, as with the National Income and Expenditure Accounts, two independent measures which are summed and averaged to derive the final estimate of GDP.

(C) Different Methods of Valuing Production

There are three different methods used to value production:

(a) At Current Market Prices where production is valued at the market price paid by final users. This is the method of valuation used in the Consolidated Income and Expenditure Accounts.

(b) At Factor Cost where production is valued in terms of the costs of the factors of production (land, labour, capital and entrepreneurship). It differs from valuation at market price because it does not include indirect taxes less subsidies or the residual error (all of which are not factor costs but are included in market price).

(c) At Constant Prices where production is valued in terms of a given base year to reflect "real" or non-price changes in output. Measured in constant price GDP reflects the volume as opposed to value of output. There are two measures of real output. The first is real Gross Domestic Expenditure which is the Consolidated Expenditure Account deflated. The second is Real Domestic Product (RDP) which is the net value added by industry approach deflated. The first approach is that which is used in the Manitoba Economic Accounts.

(D) Sector Accounts

The Economic Accounts consist of four sector accounts: (1) persons; (2) governments; (3) business; and (4) non-residents.

The sector accounts contain records of both requited and unrequited transactions among sectors. Requited transactions are those in which a two-way exchange (e.g., goods and services for currency) takes place, while unrequited transactions (e.g., family allowances, other transfer payments, etc.) involve no tangible exchange. In an economic accounting sense, unrequited transactions are redistributive as opposed to productive. They are included in the sector accounts to provide a complete picture of the current income and expenditures of sectors, but are omitted in the consolidated tables to avoid duplication in the estimates of production.

(6) DATA SOURCES FOR THE ANNUAL ECONOMIC ACCOUNTS:

The data for the MBS Economic Accounts is drawn mostly from Statistics Canada sources (both published and unpublished), supplemented by some provincial government financial data and information from a number of government departments.

The Annual Economic Accounts are calculated using over 8000 equations and approximately 2000 input data series. The data is subject to revision twice yearly. MBS, except in a few specific cases, adopts (when available) the data which is currently produced by Statistics Canada for current dollar GDP and Personal Income.

(7) DATA AVAILABILITY:

The MBS Economic Accounts provide annual data on an historical basis for both the Income and Expenditure Accounts. The income account estimates begin in 1961 and the expenditure account, for both current and constant dollars, begins in 1971.

The Accounts are produced twice a year. Normally in April or May preliminary estimates are provided for the year just ended, and in October or November final estimates are produced. Statistics Canada data, when available, is incorporated into these two cycles. The practice of Statistics Canada regarding historical revisions, with some exceptions, is normally followed. This policy subjects the most current four years to revision.

MBS currently produces a wide range of detailed data from the Economic Accounts including the following:

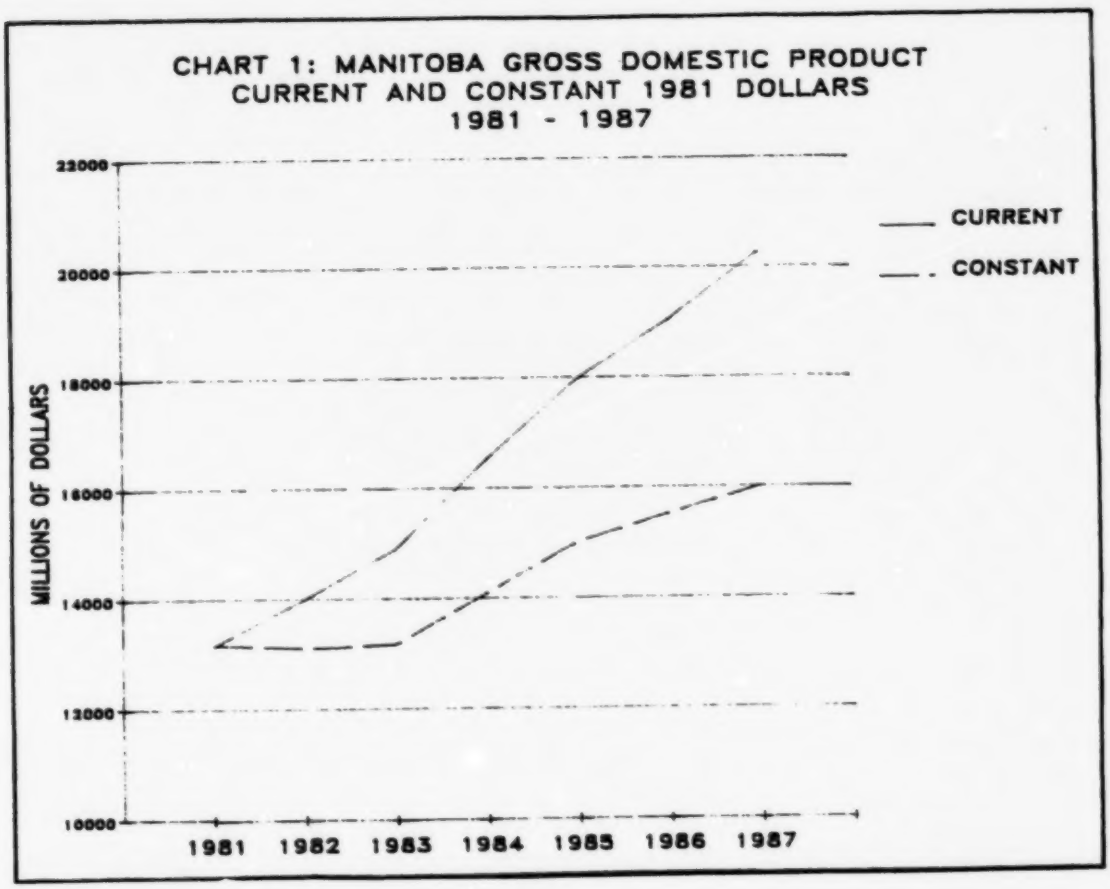
-GDP in both nominal and current dollars
-Nominal Income and Expenditure Account and Deflated Expenditure Account
-GDP by Industry and Activity for nineteen industries and for 22 manufacturing groups
-Detailed government sector data including revenues and expenditures, taxation, and transfers to and from persons
-Investment by industry in current and constant dollars
-Detailed personal expenditures in both current and constant dollars
-Personal Income and Personal Disposable Income in both current and constant 1981 dollars (purchasing power)
-Merchandise trade in both current and constant dollars

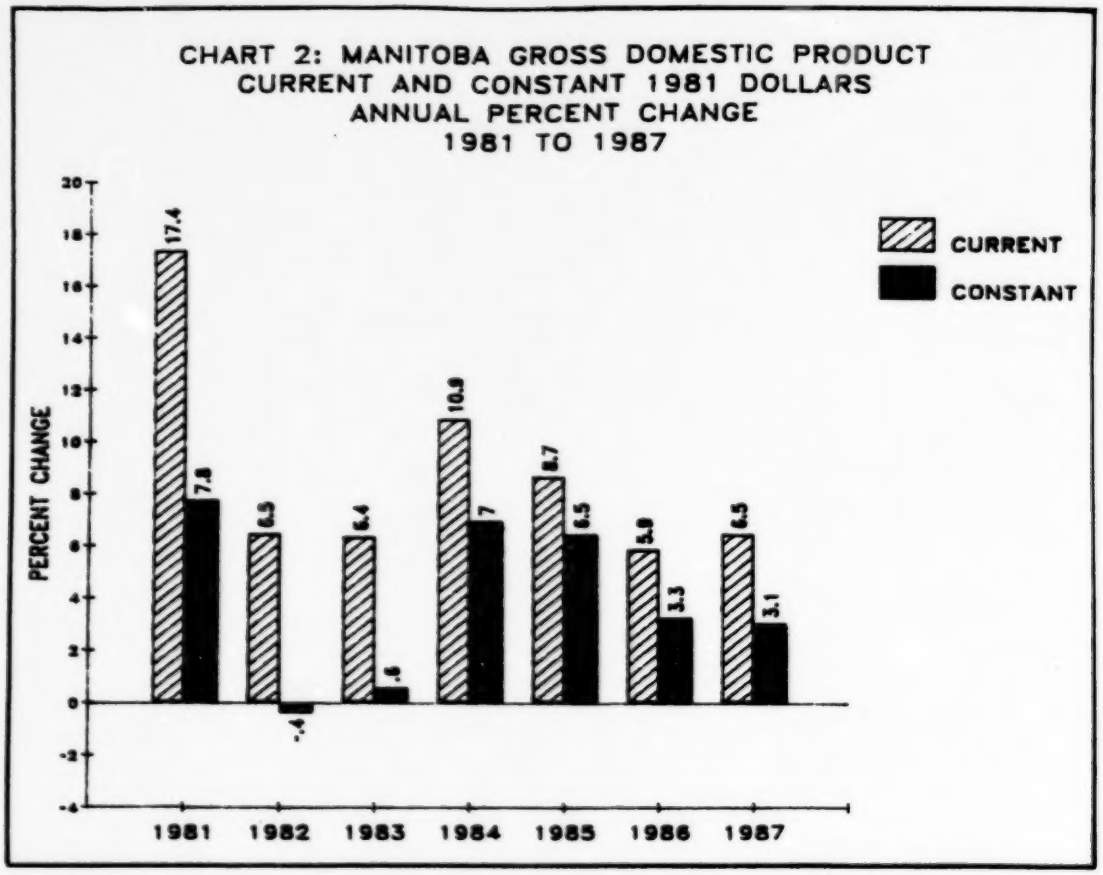
(8) DEFLATION OF THE ANNUAL ECONOMIC ACCOUNTS:

The change in the current dollar value of production from one year to the next is made up of two components. They are the change in the volume of output and the change in the price of that output. The purpose behind the deflation process is to remove the portion that is due to change in price and leave remaining the change in volume or real output.

MBS produces an estimate of real GDP by deflating the Expenditure Account. This is the same process used by Statistics Canada in the National Income and Expenditure Accounts. Various price indexes, mostly Manitoba based, are used to deflate each of the components of the Expenditure Account. In all, over 500 individual indexes are used. The deflated values, or real estimates, measure the volume of production taking place in the year.

Chart 1 shows a comparison of the current and constant estimates of GDP for the period 1981 to 1987. The gap between the two lines is the effect of price changes. Chart 2 shows the annual percent change in the two series from 1981 to 1987. In 1987, current GDP grew by 6.5% while real GDP grew by 3.1%. The difference is due to price increases of 3.2% in the Manitoba economy.





After the deflation process is completed, implicit indexes are calculated for the major expenditure account items by dividing the relevant current dollar item by its constant dollar equivalent. The implicit indexes gives currently weighted measures of price change which are useful as estimates of inflation.

MBS has followed Statistics Canada lead and has rebased the expenditure account from constant 1971 dollars to constant 1981 dollars. This periodic rebasing of the accounts becomes necessary because technological and other structural changes in the economy make previous base year weights inappropriate measures of current economic conditions. Unlike Statistics Canada MBS has recalculated new growth rates from 1971 to 1980 based on the new 1981 base year weights. The practice of Statistics Canada is to let the new weights affect only the period from 1981 forward and hold previous growth rates unchanged by means of adjusting entries.

An alternative to deflation of the Expenditure Account to estimate real GDP is the production of RDP (Real Domestic Product) by industry. Estimates of RDP by industry are derived by a process of "double deflation" - deflating each industry's gross output and subtracting from it the deflated value of each industry's material and service inputs. RDP estimates are at factor cost and not market price as are the deflated Expenditure Account estimates.

A number of private forecasting agencies (including the Conference Board) calculate, usually by allocating the national estimates, provincial RDP by industry. These estimates, unlike the deflation of the expenditure account approach, are calculated independently of the nominal estimates. They are also likely, because of the methodologies employed, to provide estimates which are different from those produced by the expenditure account deflation process.

(9) FUTURE DEVELOPMENT WORK:

Currently, MBS provides both nominal and constant dollar estimates of merchandise trade. Trade in services, both interprovincial and international, is left as a residual on the expenditure account (currently Statistics Canada leaves both trade in merchandise and services as a residual). MBS is reviewing possible methodologies to estimate trade in services. Of particular interest will be the estimates of trade in services contained in Statistics Canada's Interprovincial Input/Output Model for 1984 (which should be released in the latter part of 1988). At this time MBS may, on an experimental basis, provide estimates of trade in services.

Other areas which are planned for review and possible improvement include merchandise imports and exports and value of inventory change by industry.